This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-2. (Canceled)

3. (Currently Amended) ~~The apparatus according to claim 2,~~ A signal processing apparatus for interpolating an output color signal from an image sensing device, comprising:

first interpolating device that performs interpolation in a pixel position as an object of interpolation on the basis of pixel data in first and second directions;

second interpolating device that performs interpolation in a pixel position as an object of interpolation on the basis of pixel data in the first direction;

third interpolating device that performs interpolation in a pixel position as an object of interpolation on the basis of pixel data in the second direction;

determining device that determines correlations in the first and second directions with respect to a signal at a pixel position as an object of interpolation;

selecting device that selects interpolated data based on an output from one of said second and third interpolating device, on the basis of the determination result from said determining device; and

output device that outputs an interpolated signal on the basis of interpolated data, which is based on an output from said first interpolating device, and the output interpolated data from said selecting device,

wherein if said determining device is expected to determine that the correlations in the

first and second directions would become equal, said output device generates ~~an~~ the interpolated

signal by performing weighting such that the interpolated data based on the output from said first

interpolating device is weighted more than the output interpolated data from said selecting

device.

4. (Currently Amended) ~~The apparatus according to claim 1,~~

A signal processing apparatus for interpolating an output color signal from an image

sensing device, comprising:

first interpolating device that performs interpolation in a pixel position as an object of

interpolation on the basis of pixel data in first and second directions;

second interpolating device that performs interpolation in a pixel position as an object of

interpolation on the basis of pixel data in the first direction;

third interpolating device that performs interpolation in a pixel position as an object of

interpolation on the basis of pixel data in the second direction;

determining device that determines correlations in the first and second directions with

respect to a signal at a pixel position as an object of interpolation;

selecting device that selects interpolated data based on an output from one of said second

and third interpolating device, on the basis of the determination result from said determining

device; and

output device that outputs an interpolated signal on the basis of interpolated data, which

is based on an output from said first interpolating device, and the output interpolated data from

said selecting device,

wherein said second interpolating device performs interpolation on the basis of pixel data, in the first direction, over a broader range than that when said first interpolating device performs interpolation.

5. (Currently Amended) ~~The apparatus according to claim 1,~~ A signal processing apparatus for interpolating an output color signal from an image sensing device, comprising:

first interpolating device that performs interpolation in a pixel position as an object of interpolation on the basis of pixel data in first and second directions;

second interpolating device that performs interpolation in a pixel position as an object of interpolation on the basis of pixel data in the first direction;

third interpolating device that performs interpolation in a pixel position as an object of interpolation on the basis of pixel data in the second direction;

determining device that determines correlations in the first and second directions with respect to a signal at a pixel position as an object of interpolation;

selecting device that selects interpolated data based on an output from one of said second and third interpolating device, on the basis of the determination result from said determining device; and

output device that outputs an interpolated signal on the basis of interpolated data, which is based on an output from said first interpolating device, and the output interpolated data from said selecting device,

wherein said third interpolating device performs interpolation on the basis of pixel data,

in the second direction, over a broader range than that when said first interpolating device

performs interpolation.

6. (Currently Amended) ~~The apparatus according to claim 1,~~ A signal processing

apparatus for interpolating an output color signal from an image sensing device, comprising:

first interpolating device that performs interpolation in a pixel position as an object of

interpolation on the basis of pixel data in first and second directions;

second interpolating device that performs interpolation in a pixel position as an object of

interpolation on the basis of pixel data in the first direction;

third interpolating device that performs interpolation in a pixel position as an object of

interpolation on the basis of pixel data in the second direction;

determining device that determines correlations in the first and second directions with

respect to a signal at a pixel position as an object of interpolation;

selecting device that selects interpolated data based on an output from one of said second

and third interpolating device, on the basis of the determination result from said determining

device; and

output device that outputs an interpolated signal on the basis of interpolated data, which

is based on an output from said first interpolating device, and the output interpolated data from

said selecting device,

wherein said selecting device selects one of a difference between the output interpolated

data from said second interpolating device and the output interpolated data from said first

interpolating device, and a difference between the output interpolated data from said third interpolating device and the output interpolated data from said first interpolating device.

7. (Original) The apparatus according to claim 6, wherein if said determining device determines that a pixel position as an object of interpolation has a higher correlation in the second direction than in the first direction, said selecting device selects a difference between the output interpolated data from said second interpolating device and the output interpolated data from said first interpolating device.

8. (Original) The apparatus according to claim 6, wherein if said determining device determines that a pixel position as an object of interpolation has a higher correlation in the first direction than in the second direction, said selecting device selects a difference between the output interpolated data from said third interpolating device and the output interpolated data from said first interpolating device.

9-11. (Canceled)

12. (Currently Amended) The apparatus according to claim [[1]] 3, wherein said image sensing device has color filters having a Bayer arrangement.

13. (Currently Amended) The apparatus according to claim [[1]] 3, wherein in said image sensing device, pixels are offset.

14-15. (Canceled)

16. (Currently Amended) ~~The method according to claim 15,~~ A signal processing method of interpolating an output color signal from an image sensing device, comprising:

the first interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in first and second directions;

the second interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the first direction;

the third interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the second direction;

the selection step of determining correlations in the first and second directions with respect to a signal at a pixel position as an object of interpolation and, on the basis of the determination result, selecting interpolated data based on an output from one of the second and third interpolation steps; and

the output step of outputting an interpolated signal on the basis of interpolated data, which is based on an output from the first interpolation step, and the output interpolated data from the selection step,

wherein if it is expected to be determined that the correlations in the first and second directions would become equal, the output step comprises generating ~~an~~ the interpolated signal by performing weighting such that the interpolated data based on the output from the first interpolation step is weighted more than the output interpolated data from the selection step.

17. (Currently Amended) ~~The method according to claim 14,~~ A signal processing method of interpolating an output color signal from an image sensing device, comprising:

the first interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in first and second directions;

the second interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the first direction;

the third interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the second direction;

the selection step of determining correlations in the first and second directions with respect to a signal at a pixel position as an object of interpolation and, on the basis of the determination result, selecting interpolated data based on an output from one of the second and third interpolation steps; and

the output step of outputting an interpolated signal on the basis of interpolated data, which is based on an output from the first interpolation step, and the output interpolated data from the selection step,

wherein the second interpolation step comprises performing interpolation on the basis of pixel data, in the first direction, over a broader range than that when the first interpolation step performs interpolation.

18. (Currently Amended) ~~The method according to claim 14,~~ A signal processing method of interpolating an output color signal from an image sensing device, comprising:

the first interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in first and second directions;

68565 v1

-9-

the second interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the first direction;

the third interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the second direction;

the selection step of determining correlations in the first and second directions with respect to a signal at a pixel position as an object of interpolation and, on the basis of the determination result, selecting interpolated data based on an output from one of the second and third interpolation steps; and

the output step of outputting an interpolated signal on the basis of interpolated data, which is based on an output from the first interpolation step, and the output interpolated data from the selection step,

wherein the third interpolation step comprises performing interpolation on the basis of pixel data, in the second direction, over a broader range than that when the first interpolation step performs interpolation.

19-23. (Canceled)

24. (Currently Amended) ~~The medium according to claim 23,~~ A storage medium storing an operation process program for interpolating an output color signal from an image sensing device, said operation process program comprising:

the first interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in first and second directions;

the second interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the first direction;

the third interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the second direction;

the selection step of determining correlations in the first and second directions with respect to a signal at a pixel position as an object of interpolation and, on the basis of the determination result, selecting interpolated data based on an output from one of the second and third interpolation steps; and

the output step of outputting an interpolated signal on the basis of interpolated data, which is based on an output from the first interpolation step, and the output interpolated data from the selection step,

wherein if it is expected to be determined that the correlations in the first and second directions would become equal, the output step comprises generating ~~an~~ the interpolated signal by performing weighting such that the interpolated data based on the output from the first interpolation step is weighted more than the output interpolated data from the selection step.

25. (Currently Amended) ~~The medium according to claim 22,~~ A storage medium storing an operation process program for interpolating an output color signal from an image sensing device, said operation process program comprising:

the first interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in first and second directions;

the second interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the first direction;

the third interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the second direction;

the selection step of determining correlations in the first and second directions with respect to a signal at a pixel position as an object of interpolation and, on the basis of the determination result, selecting interpolated data based on an output from one of the second and third interpolation steps; and

the output step of outputting an interpolated signal on the basis of interpolated data, which is based on an output from the first interpolation step, and the output interpolated data from the selection step,

wherein the second interpolation step comprises performing interpolation on the basis of pixel data, in the first direction, over a broader range than that when the first interpolation step performs interpolation.

26. (Currently Amended) ~~The medium according to claim 22,~~ A storage medium storing an operation process program for interpolating an output color signal from an image sensing device, said operation process program comprising:

the first interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in first and second directions;

the second interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the first direction;

the third interpolation step of performing interpolation in a pixel position as an object of interpolation on the basis of pixel data in the second direction;

the selection step of determining correlations in the first and second directions with respect to a signal at a pixel position as an object of interpolation and, on the basis of the determination result, selecting interpolated data based on an output from one of the second and third interpolation steps; and

the output step of outputting an interpolated signal on the basis of interpolated data, which is based on an output from the first interpolation step, and the output interpolated data from the selection step,

wherein the third interpolation step comprises performing interpolation on the basis of pixel data, in the second direction, over a broader range than that when the first interpolation step performs interpolation.

27-37. (Canceled)